SYSTEMS AND METHODS FOR MICROELECTROMECHANICAL SYSTEM BASED FLUID EJECTION

Abstract of the Disclosure

A microelectromechanical system based fluid ejector comprises an ejector nozzle, a chamber that communicates with the ejector nozzle, and a plurality of movable ejection structures associated with the ejector nozzle and arranged to move in the chamber such that a variable volume of fluid is ejected from the associated ejector nozzle. The plurality of movable ejection structures may also be arranged to move in the chamber such that a continuous flow of fluid is ejected from the associated ejector nozzle. A controller may be used to actuate each of the plurality of movable ejection structures independently. The movable ejection structures may comprise a piston, a flexible diaphragm or the like. A plurality of actuators may be provided, with each of the actuators being associated with one of the ejection structures. The actuators may comprise electrostatic, magnetic or thermal actuators, or the like.

Figures